

protected

Magazine of National Parks Association of Queensland

Kids in national parks

FEATURING

LAST CHILD IN THE WOODS

ALSO

- Parallel Parks
- Our remarkable old trees part 2
- Marine reserve: under threat!



Issue 22

SPRING 2018



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Reece Pianta, Jeannie Rice and Marika Strand.

Contributor guidelines

If you have an idea for a *Protected* article we would love to hear from you. We can help with reviewing, editing and images. Contributions are always welcome. Please email admin@npaq.org.au for a schedule of future editions.

Contributors, please include contact details and brief personal summary. Articles can be submitted via email or hard copy. Digital photos should be minimum 300dpi.

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Left image: Daintree NP (NPAQ Library)

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The National Parks Association of Queensland (NPAQ) promotes the preservation, expansion and good management of national parks in Queensland.



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Connect and Protect

FROM THE PRESIDENT



Graeme Bartrim
President, National Parks Association of Queensland (NPAQ)

Banner: NPAQ Library

Welcome to the Spring edition of *Protected*.

This edition emphasizes the importance of nature to us - human beings. An excerpt from Richard Louv's book reinforces the importance of nature in childhood. The article on *New Horizon's Parallel Parks* initiative shows how the use of digital technology can bring nature experiences to those who are physically unable to visit our special locations. Exposure to our natural world is so important that we humans are deploying new technology to ensure everybody can access it - as clear a demonstration as any why we need to cherish and protect our environment.

This edition also presents some disturbing facts regarding cats and our wildlife. As a community we must recognise the duality of the domestic cat: as a pet, it provides solace and company to many, but in our bushland, it is a highly efficient killer that maims and slaughters our wildlife. The impact of cats on our native species urgently needs control. We fully support the Australian Wildlife Conservancy's plans to fund eventual CSIRO research into controlling our feral cat population through genetic modification and managing associated risks.

Nearby to my place is a park containing some remnant bushland following a creek. I spend some time in the bushland collecting rubbish and weeding. There are several challenges for the native plants and animals that inhabit this narrow corridor.

These include:

- The lack of truly old trees. The benefits of these have been described in articles by Greg Siepen in this and our previous edition;
- The land is used at times to dispose of litter;
- To ensure access for mowing adjacent lawns council removes low hanging branches of native plants;
- Neighbourhood cats are observed hunting there;
- An occasional ambitious child takes an axe and cuts down a sapling;
- A variety of weeds that are well established including:

Chinese Elm, which was introduced to Australia as an ornamental. It can form dense stands and exclude growth of native plants.

Leucaena, which was imported to provide stock fodder and has successfully subsequently escaped farming land. It also forms dense thickets to the exclusion of other species.

Groundsel, which was introduced as an ornamental to the Brisbane region prior to 1900 and successfully replaces other plants.

This little patch of urban bushland could be considered as a microcosm of our national park estate. We human beings undertake many activities beyond national parks, and within, which can have inadvertent and unintended consequences. Simply declaring an area national park is inadequate, without targeted management that controls threats to the long-term viability

of biodiversity.

We urge our decision makers who see commercial opportunities in our national parks to seek a full understanding of potential impacts to park conservation values before resources are devoted to such proposals.

We are pleased to join with a group of over a dozen environment organisations calling on our state government to increase expenditure on park acquisition and management. Specifically it is time that the state government strengthened environmental protection laws, grow and better manage our national parks, grow private protected areas, support Indigenous land management, restore land to Traditional Owners, create new protected areas and fund our protected areas. Further details can be seen at

www.npaq.org.au.

It is time that Queensland focused on protecting representative natural communities and managing them for the long term.

We look forward to seeing as many members as possible at our AGM on the 19th of September.

If you have an article idea - we want to hear from you!

We can help with editing, images and content.
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LAST CHILD IN THE WOODS

An excerpt from Richard Louv's book

Richard Louv
Author of *Last Child in the Woods*

One evening when my boys were younger, Matthew, then ten, looked at me from across a restaurant table and said quite seriously, "Dad, how come it was more fun when you were a kid?"

I asked what he meant.

"Well, you're always talking about your woods and tree houses, and how you used to ride that horse down near the swamp."

At first, I thought he was irritated with me. I had, in fact, been telling him what it was like to use string and pieces of liver to catch crawdads in a creek, something I'd be hard-pressed to find a child doing these days. Like many parents, I do tend to romanticize my own childhood—and, I fear, too readily discount my children's experiences of play and adventure. But my son was serious; he felt he had missed out on something important.

He was right. Americans around my age, baby boomers or older,

enjoyed a kind of free, natural play that seems, in the era of kid pagers, instant messaging, and Nintendo, like a quaint artifact.

Within the space of a few decades, the way children understand and experience nature has changed radically. The polarity of the relationship has reversed. Today, kids are aware of the global threats to the environment—but their physical contact, their intimacy with nature, is fading. That's exactly the opposite of how it was when I was a child.

As a boy, I was unaware that my woods were ecologically connected with any other forests. Nobody in the 1950s talked about acid rain or holes in the ozone layer or global warming. But I knew my woods and my fields; I knew every bend in the creek and dip in the beaten dirt paths. I wandered those woods even in my dreams. A kid today can likely tell you about the Amazon rain forest—but not about the last time he or she explored the woods in solitude, or lay in a field listening to the wind and watching the clouds move.

This book explores the increasing divide between the young and the natural world, and the environmental, social, psychological, and spiritual implications of that change. It also describes the accumulating research that reveals the necessity of contact with nature for healthy child—and adult—development.

While I pay particular attention to children, my focus is also on those Americans born during the past two to three decades. The shift in our relationship to

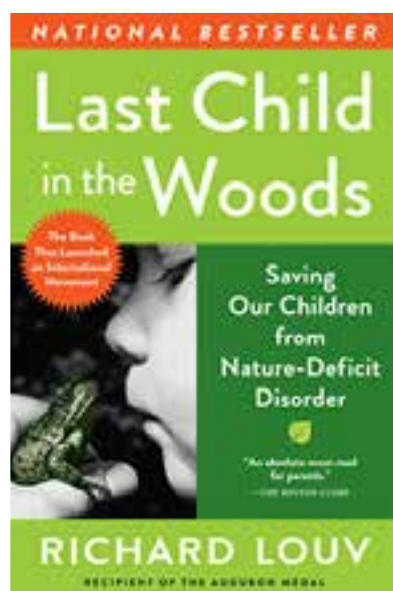
the natural world is startling, even in settings that one would assume are devoted to nature. Not that long ago, summer camp was a place where you camped, hiked in the woods, learned about plants and animals, or told firelight stories about ghosts or mountain lions. As likely as not today, "summer camp" is a

Increasingly, nature is something to watch, to consume, to wear—to ignore.

weight-loss camp, or a computer camp. For a new generation, nature is more abstraction than reality. Increasingly, nature is something to watch, to consume, to wear—to ignore. A recent television ad depicts a four-wheel-drive SUV racing along a breathtakingly beautiful mountain stream—while in the backseat two children watch a movie on a flip-down video screen, oblivious to the landscape and water beyond the windows.

A century ago, the historian Frederick Jackson Turner announced that the American frontier had ended. His thesis has been discussed and debated ever since. Today, a similar and more important line is being crossed.

Our society is teaching young people to avoid direct experience in nature. That lesson is delivered in schools, families, even organizations devoted to the outdoors, and codified into the legal and regulatory structures of many of our communities. Our institutions, urban/suburban design, and



WOODS

Images: banner: exploring Daintree NP; inset left: Richard Louv is the author of Last Child in the Woods; inset right: butterflies.

cultural attitudes unconsciously associate nature with doom—while disassociating the outdoors from joy and solitude. Well meaning public school systems, media, and parents are effectively scaring children straight out of the woods and fields. In the patent-or-perish environment of higher education, we see the death of natural history as the more hands-on disciplines, such as zoology, give way to more theoretical and remunerative microbiology and genetic engineering. Rapidly advancing technologies are blurring the lines between humans, other animals, and machines. The postmodern notion that reality is only a construct—that we are what we program—suggests limitless human possibilities; but as the young spend less and less of their lives in natural surroundings, their senses narrow, physiologically and psychologically, and this reduces the richness of human



experience.

Yet, at the very moment that the bond is breaking between the young and the natural world, a growing body of research links our mental, physical, and spiritual health directly to our association with nature—in positive ways. Several of these studies suggest that thoughtful exposure of youngsters to nature can even be a powerful form of therapy for attention-deficit disorders and other maladies. As one scientist puts it, we can now assume that just as children need good nutrition and adequate sleep, they may very well need contact with nature.

Reducing that deficit—healing the broken bond between our young and nature—is in our self-interest, not only because aesthetics or justice demands it, but also because our mental, physical, and spiritual health depends upon it. The health of the earth is at stake as well. How the young respond to nature, and how they raise their own children, will shape the configurations and conditions of our cities, homes—our daily lives. The following pages explore an alternative path to the future, including some of the most innovative environment—based school programs; a reimagining and redesign of the urban environment—what one theorist calls the coming “zoopolis”; ways of addressing the challenges besetting environmental groups; and ways that faith-based organizations can help reclaim nature as part of the spiritual development of children. Parents, children, grandparents, teachers, scientists, religious leaders, environmentalists, and researchers from across the

nation speak in these pages. They recognize the transformation that is occurring. Some of them paint another future, in which children and nature are reunited—and the natural world is more deeply valued and protected.

During the research for this book, I was encouraged to find that many people now of college age—those who belong to the first generation to grow up in a largely de-natured environment—have tasted just enough nature to intuitively understand what they have missed. This yearning is a source of power. These young people resist the rapid slide from the real to the virtual, from the mountains to the Matrix. They do not intend to be the last children in the woods.

My sons may yet experience what author Bill McKibben has called “the end of nature,” the final sadness of a world where there is no escaping man. But there is another possibility: not the end of nature, but the rebirth of wonder and even joy. Jackson’s obituary for the American frontier was only partly accurate: one frontier did disappear, but a second one followed, in which Americans romanticized, exploited, protected, and destroyed nature. Now that frontier—which existed in the family farm, the woods at the end of the road, the national parks, and in our hearts—is itself disappearing or changing beyond recognition.

But, as before, one relationship with nature can evolve into another. This book is about the end of that earlier time, but it is also about a new frontier—a better way to live with nature.

Extracted from The Last Child in the Woods by Richard Louv published by Atlantic Books Ltd.

OUR REMARKABLE

PART 2

Greg Siepen, Daniel Cole and Jan Allen
VTGA - Veteran Tree Group Australia

Veteran (very old) trees are important components of many ecosystems and landscapes. In Part 1 we discussed their environmental values and unique characteristics, as well as their cultural values and benefits. Part 2 will focus on the survival strategies employed by these ancient flora representatives and the range of management actions that will assist their continued survival.

Survival Strategies

Veteran trees are survivors and often show scars of a dramatic life. These veteran and ancient attributes that we usually associate with decline or poor health, reflect strategies that allow trees to survive for many decades or centuries, providing stable habitat structures and a resilient source of genetic provenance. Some of those strategies include:

Crown retrenchment

As a tree ages it accumulates more and more dysfunctional tissue which imposes limitations on the vascular transport of water to the canopy peripheries. By slowly withdrawing stored carbohydrates from upper and outer branches and concentrating growth of new shoots within the lower canopy, the tree becomes shorter and more stable. It allows the tree to conserve resources in stressful situations and to avoid catastrophic failure from excessive wind loading. If trees are to stay standing for a long time then they need to retain as much of the lower and internal branches as possible; they are the tree's superannuation pension



Park veteran tree (G Siepen)

and may be the primary crown when the tree has retrenched or lost its upper canopy.

Coppice growth from lignotubers and root suckering

Coppicing from lignotubers can often be seen in mallee trees used for firewood or eucalypt oil production. There is one population of Meelup Mallee (*Eucalyptus phylacis*) in Western Australia which is composed of 25 genetically identically cloned trees. The trees are estimated to be between 6,380 and 6,600 years old. Coppicing from roots of ancient trees is best exemplified in Antarctic Beech (*Nothofagus moorei*) trees at Springbrook National Park where the oldest coppices are estimated to be over 3,000 years old.

Adventitious roots for self-layering branches

Tasmania's Huon Pines (*Lagarostrobos franklinii*) are thought to be Australia's oldest

trees. By layering their branches they can vegetatively reproduce, as seen in a stand at Mt Read that has continued to survive in the absence of female trees. The Mt Read stand is believed to be more than 10,000 years old, although no individual tree is more than 1,500 years old.

Shoots from epicormic buds

Another survival strategy for veteran trees is the production of new shoots from epicormic buds located just below the bark surface along tree trunks.

All these strategies can assist the tree to survive indefinitely in a changing landscape subject to adverse weather and catastrophic events. Over an extended lifetime, a tree may go through several cycles of reduction and regeneration.

Management Considerations

Retaining and protecting old trees should be part of every national park management plan, but because these trees often occur in inaccessible locations, very little management is usually carried out. Management strategies should include minimizing disturbance



Hollow tree - visitation (G Siepen)

OLD TREES

around the trees and making any necessary changes slowly. Management should include:

Protection of root zone

Like all plants, the root zone of veteran trees should be carefully managed to ensure continued survival. If an old

Veteran trees are survivors and often show scars of a dramatic life.

tree is located in a cleared area the ideal root protection zone can be determined by applying the Australian Standard AS4970 Protection of Trees on Development Sites, equating to a radial distance of 12 X stem diameter at breast height (DBH), as roots usually extend well beyond the tree canopy.

The root zone can also be protected by the application of mulch. Mulch will help suppress weed growth, regulate soil temperatures and moisture levels and promote soil biodiversity. However, it must be free of pathogenic fungal inoculum and other diseases. Only mulch from within the local environment near the veteran tree should be used. Weed mats, geotextiles and similar erosion control fabrics should be avoided as they can hinder nutrient recycling in the rhizosphere (the root zone below ground level).

Weed control

Weed control around old trees may be necessary if the plants are affecting the tree's growth or if they are declared invasive weeds. Any removal should be done slowly to reduce soil impacts

which may affect soil moisture or dramatically increase direct sunlight reaching the tree, causing dehydration or sunscald.

It is best to undertake these works slowly. Large woody weeds may need to be left in situ, gradually reducing their canopies over several years. Within the root zones of old trees it is preferable to avoid spraying herbicides because they can directly damage the tree's roots and soil ecosystems, and spray drift is very difficult to control. Cut-and-paste, frilling, wicking, or hand-pulling are the preferred methods.

Plan works around them

One important aspect is the selection of appropriate species to plant when revegetating the area immediately surrounding the veteran tree. Plants should be chosen and planted to maintain appropriate canopy separation and maintain solar access to all levels of the established canopy. New trees planted too close may compete and shade out the old tree's canopy, accelerating its decline.

It may also be appropriate to remove younger trees to benefit the continued growth of an old tree, if shade and competition are a problem. This *haloing* practice should be viewed as a long term project in which changes are made slowly. Finally, planning should include the siting of any new landscape features such as paths, tracks or structures so that they are kept well clear of the veteran trees being managed.

Fencing near tracks and roads

Veteran trees located near tracks and roads can be protected from human and vehicle risks by fencing. Ideally, any tracks should be located 15 X DBH (of the



Cathedral grove Vancouver Island (G Siepen)

veteran tree) or five metres beyond the tree's drip-line.

Popularly visited trees

Veteran trees that may be popular tourist attractions need to be managed carefully to ensure the safety of visitors. People may need to be kept away from the base of the tree and from under the canopy by appropriate fencing or the installation of fenced boardwalks (e.g. Curtain fig boardwalk).

Summary

Veteran and ancient trees contain the genetic material from the forests that were cleared during European settlement. These very old trees have seen the landscape change and withstood disastrous climatic events during their lives. Protection and management is our responsibility whether these trees occur on farms, in council parks or in national parks. They should be considered as national treasures and conserved.

Veteran Tree Group Australia (VTGA) (www.facebook.com/Veteran-Tree-Group-Australia) organises workshops and has expert information about veteran trees and their management.



PARALLEL PARKS

Kim Gracey
Parallel Parks

A founding purpose for NPAQ was to grow and protect national parks and appreciation for nature. Where once this was reflected in photography and sketches, new technology is opening different frontiers for the sharing of our precious natural places. Parallel Parks is one example of this.

Technology is a great enabler. It has the power to remove barriers and change lives. And it is constantly evolving. Even technology that has been around for some time, is being used in new and innovative ways. Virtual reality (VR) for example has been around for a long time, being used as far back as the 1970s for medical, flight and military purposes. Now thanks to a new initiative, VR is now being used in a new way, to allow more people to access nature, and increase their wellbeing. More than a billion people have some form of disability.

For people with disability or mobility issues, diving the Great Barrier Reef, or walking around Kangaroo Island can be just a dream. With the mental and physical benefits of connecting with nature being well documented, New Horizons believes that everyone should be able to benefit from the wealth of nature Australia, and the world offers. So they have a bold mission: to harness the power of Virtual Reality (VR) to remove barriers and create opportunities to explore the world that millions could once have only dreamt of.

And they're helping to do just that through their Parallel Parks initiative. Parallel Parks allows people with disability to access the wonders of Australia's national parks through the power of VR – simply through using a phone-based app and headset.

Parallel Parks came as a result of a desire to make parks more accessible to people with disability. Given the many challenges involved in people with disability travelling to and



around the national parks, it was instead decided to bring the parks to the people. And so Parallel Parks was born. Several partners have supported the project to help bring it to life, including NSW National Parks and Wildlife Service (NPWS) People & Parks Foundation, Qantas and Telstra.

To realise our vision we face some challenges.

Challenge #1: High-Quality Content

Filming HD 3D footage in remote, and sometimes inhospitable, locations is neither cheap, nor easy. Not surprisingly, most quality footage is produced by individual businesses for specific audiences. Like our partner, Qantas, who's done some cool stuff for their First Class passengers.

Challenge #2: Immersive Experiences

Building apps for Virtual Reality experiences involves, well, building. Because the 3D app market is not quite as mature as 2D just yet, it requires different skills and different technology. Currently there are no off-the-shelf products, so pretty much anything HD 3D has to be custom made.

Challenge #3: Accessible Equipment

Although Australia ranks among the highest ownership of smart devices in the world, most of which are now capable of running Virtual Reality apps, people with disability are among the most disadvantaged of all Australians; smart devices and Virtual Reality headsets are still beyond reach for many.



Images: *Parallel Parks in Action (Parallel Parks)*

Parallel Parks is a bold initiative with a big vision: to make the world's national parks accessible to all.

Parallel Parks uses VR to transport people to places they may not otherwise be able to visit, from Uluru-Kata Tjuta to Murray River. People like Cath, a New Horizons customer who's always dreamed of diving the Great Barrier Reef but is in a wheelchair.

She's just one of the many partners who have been working with New Horizons to develop and promote the initiative.

She says: "I daydream of diving through an underwater world. Virtual reality opens doors and

enables me to experience the wonders of nature. But while the technology exists we face some challenges."

Gathering HD 3D footage is challenging. Filming in remote and sometimes inhospitable areas isn't easy, nor is it cheap. Qantas partnered with New Horizons to provide some of their footage used for First Class passengers but there is still a need to source more.

The project can currently transport people to:

- The Great Barrier Reef
- Murray River
- Kangaroo Island
- Uluru-Kata Tjuta

The second challenge is building the virtual reality apps. This requires specific skills and unique technology. There

To find out more about Parallel Parks and how you can get involved, visit www.parallelparks.com.au

are no off-the-shelf solutions, which means custom-making to requirements.

The final challenge is ensuring people have access to the necessary equipment. People with disability are among the most disadvantaged of all Australians. Smartphones, and VR headsets are still out of reach for many. When Australia has among the highest smartphone ownership in the world, there is clearly still much to be done to ensure people with disability can access the right technology to improve their wellbeing.

New Horizons hopes to raise awareness of the issues people with disability face and address the challenges through fundraising for Parallel Parks and through engaging new partners for the project across Australia.

The project is off to a great start. Launched in September last year in Sydney's Martin Place, it more recently featured throughout City of Sydney's libraries, turning them into virtual reality parks. Parallel Parks was also recently awarded a prestigious Parks & Leisure Excellence Award for 'Best use of Technology' in NSW. The awards showcase the excellent work of parks and leisure professionals who deliver enormous benefit to their communities. The project is now in the running for a national award later this year.



PARK IN FOCUS

Coral Sea Marine Reserve: fears become reality.

Dennis McMullen
Former NPAQ Councillor

This time last year Dennis wrote about a looming threat to the Coral Sea Commonwealth Marine Reserve.

Sadly the fears he wrote about have become reality and now commercial fishing is encroaching on sensitive marine reserve area.

Imagine this! A hypothetical Australian Federal Government is concerned about protecting the natural heritage but is also open to the competing commercial influence of developers who are powerfully connected.

This Federal Government, takes a lead from the Wisdom of Solomon who dealt with the dispute over a new-born baby by offering the female claimants half of the baby each.

So the hypothetical Government examines the disputed territory, let's say Its Lamington National Park.

The claims by the conservationists relate to the value of the property for future generations, demonstrating what the countryside was like prior to the arrival of Europeans. They also put forward a credible argument for its protection as a place of beauty with many wonderful features such as ancient forest, spectacular views, exceptional wildlife and natural beauty which make this park an outstanding place to explore and well worth protecting. There is a rich volcanic history under the spreading greenery of the park. Tamborine, Springbrook,

Beechmont and Lamington are remnants of the Tweed shield volcano's northern flank. Mount Warning is all that remains of the volcano's core and the Tweed Valley is a large erosion caldera carved from the eastern flank.

The developers claim is based on what they see as the locking up of a resource which could be turned into a profitable source of income, once the land is cleared.

The Government hears the arguments and comes down with its Solomon-like response.

They recognise the beauty and the significance of the forest. They agree that there are many areas within the contested territory that should be preserved. So they agree to lift the national park protection, but compensate by protecting, one example of each tree, a broad, encompassing view from a cliff, that interesting waterfall, a typical 100 metres of track and a small stand of strangler fig.

The rest of the forest is laid open for the developers, who drive a four lane highway through, set up zip lines by clearing awkwardly placed old-growth trees, and establish a hunting lodge and release wildlife for the *sportsmen*.

You might say this hypothetical is crazy stuff which could never happen.

But this is happening right now.

The former Labor Government set up the Coral Sea Commonwealth Marine Reserve which encompasses the former Coral Sea Conservation Zone, former Coringa-Herald National Nature Reserve and former

Lithou Reef National Nature Reserve.

Subsequently, when the coalition government under Prime Minister Abbott as elected in 2014 the government suspended the unfinished marine protection process which would have created 40 additional reserves along the Australian coast.

Instead The federal Government has introduced a protection plan for the Coral Sea, in which protection has been continued, but has been limited to a series of reefs and atolls whilst the rest of the Coral Sea is to be thrown open to commercial fishing.

The conservation park zone now covers only 502 Km² - less than 50% of the sea.

The Marine National Park now covers only 50.78% of the reserve.

This is despite the the Coral Sea being one of the very few places in the world where relatively intact tropical marine life could be protected on a large scale.

The decision, to provide high levels of protection only to these reefs that are dotted across the Coral Sea lays the rest of the area open to the Government's invitation to commercial fishers for exploitation. This invitation even includes an offer of financial assistance to fishing entities that may have suffered loss under the Marine Park arrangements.

Areas covered with full protection include reefs such as Bougainvillea, Holmes, Marion, Wreck (where Matthew Flinders came to grief) Kenn and Cato. In the vastness of the Coral Sea, these are far distant from each other, specks in



Banner Image: Lucy Trippett (Protect Our Coral Sea)

the sea, resulting in a difficult, if not impossible task for management and control.

As a result, managing compliance of vessels in the Coral Sea is now near impossible.

The Government's own risk assessment process found eight fishing practices to be incompatible with the conservation values of the Coral Sea, yet the draft management plan proposes to expose the reserve to these intensive fishing practices.

One argument for this outcome was the necessity to protect the economies of Queensland

coastal communities where charter game fishing provides significant employment and income. Charter fishing trips from Queensland centres like Cairns are limited by their very nature. As they say, *if you catch a black marlin, it's too big to toss onto a pan, so it's photo, tag and release*. Commercial fishing is notorious for its destructive effect on fisheries.

The 50% of the sea not covered by these, now watered-down restrictions, is open to unlimited commercial fishing, using long lines, floating gill nets and ocean bottom trawling. These processes are destructive. They also produce large yields of by-

catch, unwanted fish, and other sea creatures, from seabirds to turtles, that are killed by the process, then thrown back into the sea.

The use of sea bottom trawling has been demonstrated as being destructive of the tops of seamounts which play a significant part in spawning activities. As well, many fish, caught in bottom trawling that are unwanted and discarded, are often juveniles of valuable species

There is existing clear evidence of the decline in fish stocks in Australian waters. Fish such as orange roughy, eastern gemfish and school shark are still being caught, despite being fished to as little as 10% of their natural populations.

The Coalition plan for the Coral Sea will mean that 97% of Commonwealth waters within 100 kilometres of the coast are thrown open to commercial fishing.

The recently released Coral Sea Marine Park Management Plan 2018 allows for commercial fishing using long line in *special purpose* and *habitat protected* zones, but rules out pelagic and demersal net fishing (i.e., 'shallow' or 'deep'). But policing these matters in a sea which covers almost 980,000 square kilometres is difficult if not impossible.

As Tooni Mahto, ACMS Threatened Species spokesperson said, "at a time when our oceans are under pressure from climate change, we should be giving them all the care we can."



David Hannan (Protect our Coral Sea)

WILDLIFE FEATURE

A hidden toll: Australia's cats kill almost 650 million reptiles a year

John Woinarski
Brett Murphy
Chris Dickman
Sarah Legge
Tim Doherty

Charles Darwin University
Charles Darwin University
University of Sydney
Australian National University
Deakin University

Banner: NPAQ Image Library

Cats take a hefty toll on Australia's reptiles – killing an estimated 649 million of them every year, including threatened species – according to our new research published in the journal *Wildlife Research*.

This follows the earlier discovery that cats take a similarly huge chunk out of Australian bird populations. As we reported last year, more than a million Australian birds are killed by cats every day. Since their introduction to Australia, cats have also driven many native mammal species extinct.

We collated information from about 100 previous local studies of cats' diets across Australia. These studies involved teasing apart the contents of more than 10,000 samples of faeces or stomachs from cats collected as part of management programs.

We tallied the number of reptiles found in these samples, and then scaled it up to Australia's estimated cat population of between 2.1 million and 6.3 million. We also collated information from museums and wildlife shelters on the various animals that had been brought in after being killed or injured by cats.

We calculate that an average feral cat kills 225 reptiles per year, so the total feral cat population kills 596 million reptiles per year. This tally will vary significantly from year to year, because the cat population in inland Australia fluctuates widely between drought and rainy years.

We also estimated that the average pet cat kills 14 reptiles per year. That means that Australia's 3.9 million pet cats kill 53 million reptiles in total each year. However, there is much less firm evidence to quantify the impact of pet cats,

mainly because it is much more straightforward to catch and autopsy feral cats to see what they have been eating, compared with pet cats.

Binge eaters

According to our study, cats have been known to kill 258 different Australian reptiles (snakes, lizards and turtles – but not crocodiles!), including 11 threatened species.

The cat autopsies revealed that some cats binge on reptiles, with many cases of individual cats having killed and consumed more than 20 individual lizards within the previous 24 hours. One cat's stomach was found to contain no less than 40 lizards.

Such intensive predation probably puts severe pressure on local populations of some reptile species. There is now substantial evidence that cats are a primary cause of the ongoing decline of some threatened Australian reptile species, such as the Great Desert Skink.

By our estimate, the average Australian feral cat kills four times more lizards than the average free-roaming cat in the United States (which kills 59 individuals per year). But there are many more such cats in the US (between 30 million and 80 million), so the total toll on reptiles is likely similar.

The conservation of the Australian reptile fauna has been accorded lower public profile than that of many other groups. However, a recent international program has nearly completed an assessment of the conservation status of every one of Australia's roughly 1,000 lizard and snake species.

Our research provides yet more evidence of the harm that cats are wreaking on Australia's native

wildlife. It underlines the need for more effective and strategic control of Australia's feral cats, and for more responsible ownership of pet cats.

Pet cats that are allowed to roam will kill reptiles, birds and other small animals. Preventing pet cats from roaming will help the cats live longer and healthier lives – not to mention saving the lives of wildlife.

The authors acknowledge the contribution of Russell Palmer, Glenn Edwards, Alex Nankivell, John Read and Dani Stokeld to this research.

THE CONVERSATION

Originally published by the Conversation
<https://theconversation.com/a-hidden-toll-australias-cats-kill-almost-650-million-reptiles-a-year-98854>



Cat stomach contents, including several reptile parts. Arid Recovery, Author provided

THE NATIONAL PARK EXPERIENCE

Personal reflection on why our parks must be valued

Marika Strand
National Parks Association of Queensland staff

Banner: Millstream Falls NP, insert left: Barron Gorge NP, inset right: Undara Volcanic NP (Marika Strand).

Marika shares her perspective on national parks as a way to foster a curiosity and interest in the world. We all have a opportunity to help reconnect our children - and each other - with our natural places.

I grew up in Canada and spent a good part of my childhood in the dense, wet forests of the West Coast. After moving to Australia nearly a decade ago, I quickly grew to love the very different bush and forests here. Upon having children it was important for me to share this love of the natural world with them, hoping they internalise a deep appreciation of nature as well.

I'm raising city kids - we live in a busy inner-city suburb. While this has the advantage that we can walk or bike most places we need to go, it does mean that to get out in the bush we need to venture further afield. But, for us, it's worth the effort to expose the kids to another side of life they don't see on a daily basis.

My husband and I put everything we might need in our backpack, convince the kids to wear sensible walking shoes and pack everyone in the car. After a drive with lots of laughs, some quiet reflection and a few complaints of being car sick, we finally arrive. As soon as we step out of the car the air smells



fresher and the kids are excited to get moving.

With my kids, being still rather young and full of boisterous energy, I find it nearly impossible to walk in silence and get the feeling of true immersion that comes with really listening to the forest. However, I am glad that they want to explore and comment on what they are seeing, thinking and feeling. It is their experience and while we try to guide it a little, they need to be free to form their own connections and explore their own way.

Planning is key to getting little ones on bush walks. We check the website for the park we are planning to visit and decide which walk will suit little legs. We pack food and water bottles, sunscreen, hats, a small first-aid kit, and a camera. Consistency helps - my kids know that family bushwalks are part of the rotation of what we do on the weekends, so it's not a shock to them to get out into nature.

Last year we decided to take a bigger adventure, flying north and visiting, among others, Undara Volcanic National Park and Daintree National Park. Again, planning was key - we hired a

comfortable vehicle, broke up the driving with frequent stops, varied the accommodation (staying in a tent at Undara but in a lodge near Daintree), and made sure everyone was fed on a regular basis. We did a lot of walking that trip, but the kids complained very little about tired legs. They were excited by the new experiences and what they were seeing. And my husband and I got some time to connect, playing cards and talking in the evenings, away from our city lives. It was a beneficial experience for the whole family.

I urge you to try taking the special children in your life for a bushwalk. For a list of walks and tips and tricks for making the walk successful, check out NPAQ's Kids in National Parks booklet available from our website www.npaq.org.au.



RANGER OF THE MONTH

Insights into the diverse backgrounds and day-to-day activities of Queensland's park rangers

Bridget Armstrong
Senior Conservation Officer - Barrier Reef and Marine Parks Region

Bridget Armstrong is a Senior Conservation Officer in the Great Barrier Reef and Marine Parks Region of QPWS. She spent much of her childhood playing in and exploring the bush, beaches and estuaries. She studied ecology at university, and her first job confirmed that what she loved most was to be out in the field, providing ecological advice for park management.

How long have you worked in national parks?

I started working in national parks over 20 years ago.

Which parks have you worked in?

I have worked in too many parks to list. In South Africa, I lived and worked in the Hluhluwe-iMfolozi Park, which is home to the "big five" and is the oldest nature reserve in Africa. I also worked in marine parks on mapping and categorising reefs for better management, and an experimental approach with Indigenous communities to manage the harvesting of intertidal shellfish. In New Zealand, I worked with marine mammals and the "swim with dolphins" tourism industry, and later with a kiwi recovery and feral animal control program. With QPWS, I have worked in national parks in the Gladstone and Cairns areas, and currently I work on island national parks along the whole Queensland coastline.

What is your most memorable moment?



QPWS Senior Conservation Officer Bridget Armstrong (above).

PHOTOS: BRIDGET ARMSTRONG & QLD GOVERNMENT

My most memorable time was when I was part of a team assessing the extent and severity of reef and island damage after a major cyclone. It was a very windy and rough ten days at sea, but we explored a huge area, from the inky blue edge of the outer Great Barrier Reef to the shallow fringing reefs of small cays. I was amazed at how severe, but also patchy, the cyclone damage was. Some islands had *Pisonia* forests that were totally flattened and massive coral boulders were left stranded high up on the beach, while nearby reefs and islands were almost untouched.

Can you describe your favourite national parks experience?

I live in Cairns and we are spoilt with many stunning national parks on our doorstep. But one of my favourite things to do is hike the Summit trail on Fitzroy

Island. It is a quick boat ride to get to the island and you can camp there. Fitzroy Island has steep forested mountains; white, crunchy coral beaches and safe snorkelling on the fringing reefs. The views from the summit are awesome.

What is the best part about working in a national park?

In my current job I spend a lot of time at my desk, planning, advising and reviewing our conservation programs. Getting out in the national parks and seeing the outcomes of the hard work that our field rangers do is very rewarding, and often humbling. One of the best parts of my job is working with inspirational, like-minded people.

What is your top tip for visitors to parks for bushwalking?

Explore the smaller trails in and around your own town or city. There are great experiences to be had without travelling far. And especially in the tropics, remember to pack your swimmers and enjoy a dip in the cool mountain streams, away from the crocodiles and summer stingers.

What is your top tip for campers?

Although it involves a lot more gear and preparation (and the dreaded packing and unpacking), camping in the more remote parks where you can get away from the everyday stresses of modern life—including access to the internet—is an excellent way to reconnect with nature, your children and other loved ones.

NPAQ thanks Bridget for taking time to answer our questions. We appreciate the work all QPWS rangers undertake in protecting Queensland's national parks.

NPAQ activities

More details npaq.org.au/events



Daves Creek Circuit

Date: Saturday, 8 September 2018

Meet: 8.30am, Binna Burra camping picnic area car park adjacent Teahouse.

Cost: \$5 per person

Leader: Ron Owen, 0490762414,
rowen@comcen.com.au

Directions: From Brisbane take M1 towards Nerang. Take Exit 69 and turn right at lights onto Southport Nerang Road. Follow this through Nerang where Price St becomes Beaudesert Nerang Road. Follow Beaudesert Nerang Road for approx. 6 km and turn right onto Beechmont Road and then Binna Burra Road to Binna Burra. Alternatively travel to Canungra and follow signs to Binna Burra via initially Beechmont Road and then Binna Burra Road.

Bring: Backpack, sturdy footwear, hat, raingear, 2 litre water, snacks, lunch, sunscreen, insect repellent, torch.



Border Track 2018

Date: Sunday, 4 November 2018

Meet: 7.15am at park opposite Canungra Hotel. Here, cars and keys will be exchanged, with one group driving to Binna Burra to do the walk while the other drives to O'Reilly's to do the walk in the opposite direction.

Cost: \$5 per person

Leader: Frank Freeman, 07 3824 3954

Directions: Travel south along the M1 to Beenleigh. Drive through Beenleigh towards Beaudesert. A few kilometres west of Tamborine Village along the Beaudesert Road, turn left to Canungra. As you drive through Canungra, turn right towards O'Reilly's. The park, with toilets, is on the right.

Bring: Hat, light jacket, rain gear (just in case), insect repellent, 2+ litres of water, morning tea, lunch, afternoon tea.

NPAQ events

NPAQ AGM

Date: Wednesday, 19 Sept, 2018

Time: 6:30pm start

Venue: Mount Coot-tha Botanic Gardens Auditorium

NPAQ President Graeme Bartrim, warmly invites all members to attend the AGM. A report of the past financial year's activities will be presented, and the Council elected for the coming year.

A Special Members Meeting will follow the AGM to consider and vote on proposed amendments to the Association's Rules. Please contact the

office via telephone or email to register to receive a copy of the proposed amendments.

Annual Awards Presentation & Dinner

Enjoy the NPAQ Annual Awards Dinner, directly following the AGM. Romeo Lahey Awards will be presented to members who have reached the magical mark of 50 years of NPAQ membership.

Date: Wednesday 19 September

Venue: Mt Coot-tha Botanic Gardens Auditorium.

Cost: \$35 per person.

RSVP and pay by 5 September to admin@npaq.org.au, or call 07 367 0878. Payment can be made by credit card, cheque or direct bank transfer.

Vale

Syd Head

NPAQ was recently made aware of the passing of member Syd Head. Syd joined NPAQ in 2013. He passed away in December last year.

We extend our sincere condolences to Syd's family and friends.

NPAQ Survey

Completing the NPAQ 2018 survey puts you in the draw to win two nights at Girraween Environmental Lodge.

The lodge is located on 400 acres, which is predominantly bush land containing self-guided tracks. The property offers ten 4-star, self-contained chalets that provide a peaceful setting close to vineyards, other points of interest and, of course, Girraween National Park.

The National Parks Association of Queensland (NPAQ) was involved in the gazetting of this national park which, with its granitic outcrops, wild flowers and streams, attracts many visitors.

With a move to develop more ecotourism facilities in Queensland, NPAQ would encourage decision makers to consider the advantages offered by such lodges. Firstly the facilities are beyond the national

park boundary but close to it. Access to the park is easy and management of accommodation infrastructure (such as energy and waste) do not require development in the park. As a consequence the natural values of the park are less at risk and park personnel may be able to focus more on park management. Such facilities also support spending in the locality along with enjoyment of the park but with a lighter touch.

NPAQ supports such approaches.

Take the NPAQ 2018 survey for a chance to win!

Completing the survey enters you into the draw for two nights accommodation at Girraween Environmental Lodge (girraweenlodge.com.au).

Take the survey at: www.npaq.org.au/2018-survey

TELL US WHAT YOU THINK!

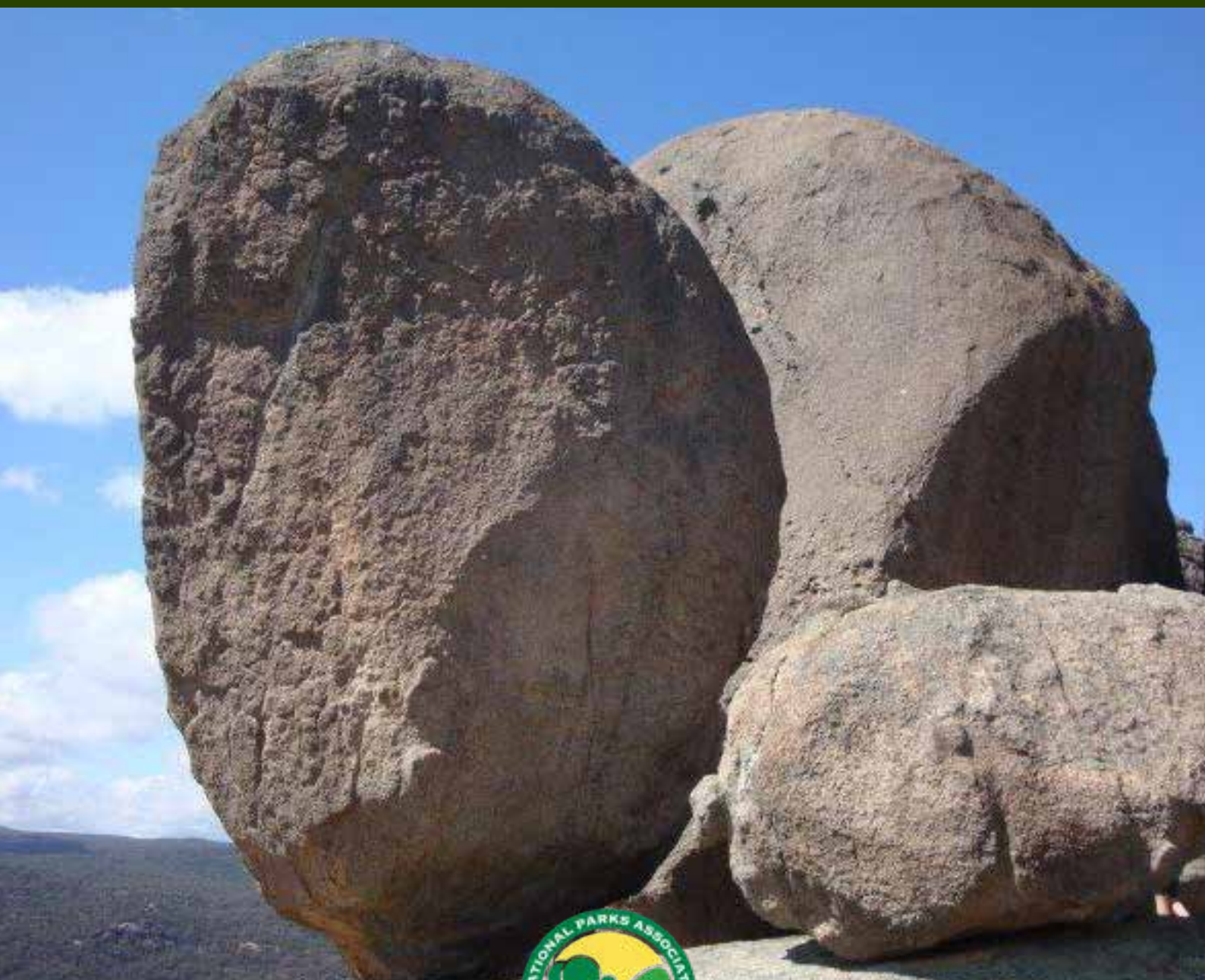


PHOTO: OSCAR WEEKS

Take the
2018 NPAQ Member Survey and enter
the draw for two nights at Girraween
Environmental Lodge!

WWW.NPAQ.ORG.AU

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Visit www.npaq.org.au/2018-survey to take the survey.

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